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ABSTRACT

A study evaluated the effectiveness of new recruitment and admissions efforts instituted as part of the post-Maoist expansion of technical-professional education in the People's Republic of China. The study attempted to determine the impact of three major types of social inequities on higher education participation, namely: stratification by rural-urban origin; social class; and gender. Using randomly selected samples totaling 268 students in teacher training and agricultural programs in two major universities, data were collected using anonymous questionnaires along with information from interviews with educational officials and policy and trend information. The questionnaire sought data on the educational and family background of students. The major findings were that students from rural areas constituted a large share of enrollees, and that these poorer rural students had gained from overall enrollment efforts but not from new recruitment/placement policies. Also, gender stereotyped expectations continued to affect female enrollment. Economic class and social privilege indicators had a small predictive value of enrollment categories. Included are six tables, appendixes containing one table, a brief documentary history of higher education in China from 1982 to 1990, and end notes and a 29-item bibliography. (JB)

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STRATIFICATION IN ACCESS TO TECHNICAL-PROFESSIONAL HIGHER EDUCATION

Higher Education Reform in the People's Republic of China, 1985-90

A Sociological Study

Presentation at the
Annual Conference of the
Comparative and International Education Society
University of Pittsburgh
March 14, 1991

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ACCESS TO HIGHER EDUCATION IN CHINA
TABLE OF CONTENTS

INTRODUCTION 1

THEORETICAL ISSUES AND RELEVANCE TO EDUCATION AND DEVELOPMENT POLICY 2
Discussion of Factors Investigated 3
Rural-Urban Stratification in Access to Education 3
Social Class Stratification in Access to Education 5
Gender 5
Recruitment and Placement Categories 5
Relevance of Research 9

RESEARCH DESIGN 10
Sampling 11
Data 12

RESULTS 12
Rural-Urban Stratification. 14
Summary Rural Participation 18
Social Class 19
Summary, Social Class 21
Gender 23
Summary, Gender 28

CONCLUSION 29

APPENDIX 1 TABLE I 31
APPENDIX 2 DOCUMENTARY HISTORY 32
BIBLIOGRAPHY 33
ENDNOTES 36

LIST OF TABLES

Table 1. Enrollment Category of Rural, County, and City Origin Students 15
Table 2. Crosstabulation of Sex by Subject Area 23
Table 3. Crosstabulation of Sex by Enrollment Category 24
Table 4. Comparison of Sex Group Means of Background Variables, *T*-test 25
Table 5. Background Variables Correlation with Sex 26
Table 6. Background Variables Partial Correlation with Sex, Controlling for Subject 27

INTRODUCTION

As part of the post-Maoist modernization reforms, the central government of the People's Republic of China began to expand technical-professional (TP) educational programs as well as the access to higher education (HE). It had been determined that critical manpower\[1] needs existed in mid-level technical skills, especially in agriculture and light industry and in less developed regions of the country. Technical professional secondary and post-secondary training was required to provide appropriately skilled personnel. The problem noted in the PRC is a familiar dilemma in developing regions all over the world--the areas in greatest need of skilled personnel often have the poorest educational provisions to meet those needs, the scantiest economic incentives to attract outsiders, and the most deficient infrastructure to support skilled personnel once in place. The PRC State Council and SEdC leadership determined that training secondary teachers and technically skilled personnel was the first order of business (see Documentary History).

HE reform policies were proposed and implemented on a trial basis in the 1980s to advance above educational-developmental goals. The trial policies were based on a recognition that historical trends in admission, training, and placement of students interfered with meeting the critical personnel needs. The model programs were focused in teacher-training and agricultural education (see Documentary History), which together represented 38.7% of TPHE entrants.

This paper reports on the first model efforts implementing the new recruitment and admissions efforts. A survey of students in teacher-education and agricultural TPHE was undertaken in the summer of 1990. Hypotheses had been developed to test the persistence of historical admissions trends reflective of social inequities, both Chinese

and common worldwide. Analytical results would allow an evaluation of the success of the new recruitment policies in terms of officially stated recruitment goals. Further, results would give an indication of the relative equity of access on standard indicators of family background--particularly as it pertains to new and old enrollment policies.

The selection made at the point of entry into TPHE is examined in this report to determine the impact of three major types of social inequities on the level of participation--defined as stratification by rural-urban origin, social class, and gender.

This paper is organized as follows: The first section provides a brief discussion of the relevance of this research to education and development policy, and introduces the theoretical basis and factors involved in this research. The second section discusses the research design, the data, and some issues of methodology. The hypotheses and the results of the analysis are presented and discussed in the third section. The fourth section summarizes the findings and presents the conclusion.

THEORETICAL ISSUES AND RELEVANCE TO EDUCATION AND DEVELOPMENT POLICY

From the perspective of educational theory and history, the 1980 TPHE reforms correspond to trends in the transition from traditional to modern education: a diversification of curriculum in the direction of applied sciences, and an increasingly broader access to education. Together these trends have provided greater equality of opportunity in education. Expansion of the enrollment base and diversification in

private-public schooling are two characteristics trends of an educational system in the modern transition.\[2]

National development and educational planners across the world have seen that regional inequalities in development and in education create seemingly intractable and mounting problems in the accumulation of skills and talent. The attendant brain-drain and educational impoverishment aggravate economic imbalances in many nations. In advanced industrialized countries striking inequality exists between poor urban centers and rich suburban education; in the developing world, between poor rural and rich urban areas.

Changes in stratification\[3] in access to education suggest that changes in the structure of society, relationships among people, and the culture are occurring. Therefore an exploration of trends in the major types of stratification, not only regional imbalances but also those associated with social class and gender, illustrates an expansion of access to social goods and social participation. The exploration of stratification in access to TPHE is intended to provide a window on such a historic trend.

Discussion of Factors Investigated

These major types of stratification in the PRC in the 1980s were chosen as independent factors for which indicators were identified and data collected.

(1) Rural-Urban Stratification in Access to Education--Independent Factor. In the late 1980s, PRC policy makers widely acknowledged the persistence of regional inequalities across sectors of the economy and the society (see also World Bank 1985). PRC state policies such as rationing and inherited household residence registration have assured

that stratification "will correspond closely to residential patterns" (Watson 1984, 15).\[4] The gap between the rural and urban areas is substantial and works to the detriment of the majority of Chinese. Of a total work force of 500 million people in 1985, 371 million or 74.3% were rural laborers (Liu, 1989, Table 3.4, p. 32). These proportions had remained steady for the previous decade. The urban to rural average income gap was as high as 3:1 in the mid 1970s (Parish and Whyte, 1978; see also World Bank, 1985), it decreased to 1.74:1 in 1980 (Beijing Radio, 1981), and, in 1984/5, increased to 2.06:1 in the national average annual per capita income of a household (Liu, 1989, Table 4.9, pp. 55, Tables 4.5 & 4.6, pp. 52-53).

The education of the rural population has been inferior (Jiang, 1980; Jiang, Zhang, 1981). For primary education a few discrepancies on common measures are given: (1) teacher educational background--80-89% of rural students between the years 1965-80 were taught by so-called "people's teachers" [minban] who had junior high school graduation or less, whereas urban students were taught almost entirely by teachers with high school and college graduation (Seeberg, 1990); (2) enrollment and graduation rates in 1980--a 30% urban passing rate contrasts with a 10% rural passing rate, according to the Minister of Education (Seeberg, 1990; Lo, 1988; He, 1988); (3) government funding--during the 1970s, when it constituted a full 56.8 percent of primary school funding (World Bank, 1983, 181), the central government per pupil expenditures on urban primary school students was between 3 to 4 times as high as for rural primary students (derived from MoE, 1984, p. 99).\[5] Higher education also has been described as largely incompatible with rural perceived and economic needs (*Beijing Review*, 3/7/1983).

Despite ten years of economic liberalization in the rural market economy, in 1990 urban residents by and large are still considered "winners" and rural ones "losers"

(personal communications 1990; Kristoff 1990; Shirk 1984). Given the sizable discrepancy between urban and rural quality of life and education, the level of participation of rural populations in TPHE appears to be a critical area for investigations on stratification. This study hopes to contribute to a baseline to record trends in rural/urban educational participation.

(2) Social Class Stratification in Access to Education--Independent Factor. Educational participation historically has been seen as a manifestation of social class privilege. In the PRC radical policy attempted to turn the traditional social class hierarchy in education upside down, especially during the Cultural Revolution (CR). After the overturn of these policies, social class stratification in education remained evident, but the composition of the classes was not clear. The subsequent free market policies of the 1980s have been suspected of recreating or hardening historical, pre-CR class stratification in education (Shirk, 1979), and the lower participation of the rural poor, the lowest class, is cited as evidence (Ma Yuqi 1984, Caixi Primary School 1982). Brown (1986), however, reasons that the underlying causes may be "conditions of poverty and need for labor that considerably antedate" the free-market policies. Brown noted that improved economic conditions traceable to the new policies appear to contribute to higher participation rates.

The social class stratification in access appears to be a contested question, and therefore, particularly in need of empirical findings.

(3) Gender--Independent Factor. Like social class, gender stratification in education is common across cultures. In HE worldwide it is persistently evident by subject of study, even after overall participation rates have equalized. Variations by gender in family background and in participation in education are reported in this study.

(4) Recruitment and Placement Categories--Dependent Variable. The Thirteenth Party Congress in 1987 proclaimed that further economic growth in the PRC "hinges" on the progress of science and technology and increasingly on the quality of education experienced by "workers" and "intellectuals," as had been pointed out by Deng Xiaoping (Party Congress Report cited by He, 1988). In 1990, new TPHE programs or institutions and recruitment/placement methods had proliferated throughout the country. The recruitment methods are differentiated by principles of a fiscal, recruitment, and job placement responsibility. They affect the students most directly through the recruitment gate and the location of the territory within which jobs are assigned.

The various ministries administering educational institutions implemented policies at different rates and used diverse patterns of dissemination.\[6] The new *locally committed recruitment-placement [dingxiang zhaosheng]* policy, for example, had been pioneered in teacher education and was expanded in subsequent years in HE associated with agriculture, energy production, and light industry (1988 State Education Committee (SEdC) and Ministry of Agriculture (MoA) joint resolution cited by Han, 1990). The policy was to continue the focus on less developed, as Chinese officials say, "remote and backward," regions of the country. The other categories by which students enrolled in schools are briefly outlined here to illustrate the variation in the selection processes in use in the PRC and compared in this study.

Contract scholarship study [weituo peiyang] is a second new category. It was designed to meet the manpower needs in conditions of higher economic development (Ming 1990). Enterprises or local governmental units can select young employees for company paid scholarship studies in return for which the student signs a contract to serve the company for five to ten years (survey of 1989 contracts provided by SHERI;

Ming, 1990; Ma at SWAU, 1990). It has become apparent in Shanghai that employers have been known to make imperfect predictions for the future need for a certain skill; so that a contract graduate, when he returns to his employer, may find his new skill under- or not utilized, and anticipated promotion and benefits stalled. This mismatch confirms popularly held suspicions regarding the control of state owned employers over career futures. The demand for this category of enrollment has fallen with the growth of the semi- and fully private economic sector; the recruitment pool has been permitted to be expand to include candidates with lower examinations scores (Wei, 1990; SHERI, 1990).

Central government, unified recruitment, tuition-waiver scholarship [tongzhao gong-fei or guojia fuwu] is the predominant and, from the 1950s till 1981, the only category of recruitment/enrollment. For this enrollment category students are recruited ultimately by the central government, which also assigns them to jobs after graduation. Until the mid 1980s this type of enrollment provided access to elite jobs and lifelong job security. In the summer of 1990, among university students and faculty, dissatisfaction with the central government job assignment system was often voiced. It was said that central government job assignment no longer guaranteed elite professional status, but represented an unknown and possibly stultifying career future (Interviews at 4 institutions; Wei, 1990; SHERI, 1990). Since the early 1980s the scholarship has been reduced to cover tuition and room in dormitories only.

Self-supported/private tuition [zifei] was reinstated in 1981 (Personal communication). It existed prior to the 1950s. For this category students volunteer to enroll after qualifying through the centrally administered university admissions examinations. Since 1988 the provincial governments have been assigning an enrollment limit quota for this

category to each school (Meng 1990). Students usually commute and are responsible for all their own affairs, because they are not assigned to the university as their unit. After graduation, students have to find jobs by themselves, i.e., are not part of the state job assignment system. This characteristic, formerly a barrier to secure elite employment, has become desirable in those areas where free-market economic reforms have taken hold, such as major urban areas (Meng, 1990; Zeng, 1990; interviews with students at Beijing Normal University, President Yu and other officials of Beijing Social University, Xin and other researchers of Shanghai Higher Education Research Institute (SHERI)).

For simplicity the two new categories, locally committed and contract-study are subsumed under the heading "new"; the two historical categories will be called "old." It is assumed in this study that the old categories provide the greatest amount of career incentive: a) the old categories are historically associated with elite career status; the new are associated with, in the case of the locally committed category, poor employers in areas with poor living conditions, and, in the case of the contract study, with steady but not elite employment positions in the state owned-sector; b) the old allow for some flexibility in career future, and the new are controlled by an employer, allowing no student family choice in employment, but instead bind the student to an employer-controlled future; c) the old categories lead to a higher level employer; either, in the central government scholarship category, administered at a national or provincial level, usually located in an urban area, or, in the case of the self-supported category, a choice of employers in developed areas, usually urban, because in these areas it is most likely that employers have the resources to hire outside of the national manpower system. In the late 1980s, individual or family based flexibility in face of the future appears to be a widely sought commodity, due to a general sense of instability reported by countless

students, faculty, researchers and their families in 1990, and officials at newly established private non-profit business colleges, Beijing Social University [Beijing Shehui Daxue], and Beijing Eastern University [Beijing Dongfang Daxue].\[7] The dichotomous enrollment category variable was rank ordered with the old categories as the highest and new categories as the lowest rank.

Various hypothesis are proposed in order to examine the relationship between stratification and enrollment categories.

Relevance of Research.

The focus of the analysis in the paper is to determine the correlation between new enrollment policy and level of participation of rural origin, lower class, and female students in TPHE to illustrate the impact of the policy on equality of access across these strata.

The present study focuses on access to education in two development sectors considered crucial to development at this time in the PRC, agriculture and teacher schooling. It is suggested that the trends in these two subject areas, due to the high priority given them by the central government authorities (see Appendix 2 Documentary History for evidence in chronology of government policy documents), are advance indications of trends in TPHE in general. As the great majority of HE is TPHE, these trends have major implications for PRC higher education in general.

Results of this research on TPHE recruitment/enrollment policies will be of interest to human resource development planners in the PRC, as well as policy makers internationally who are concerned with the development of poorer, educationally inferior, or remote regions. Despite the experimental nature of some of the subsidiary programs of

the new recruitment-placement policies, the potential impact of the policies on PRC higher education in general is great, as argued above.

The study is also intended as a contribution to studies in Chinese social sciences. Indicators of stratification and predictors of educational attainment will be operationalized and tenets of stratification theory tested.

This study is the first empirical work known to the author on the family background of students in higher education in the PRC.

RESEARCH DESIGN

Admissions in two areas of TPHE gained through new and old categories of recruitment/enrollment between 1987-89 are examined in the present study.

The findings are based on data collected on agricultural and teacher training in higher education. The findings are of value to the future of TPHE on the premise that these programs serve as models of recruitment policies in the process of being expanded to TPHE in general.

Sampling

The sample was drawn from four institutions, two administered by the MoA and two by the SEdC. The institutions are major and well known universities: North West (NWAU) and South West Agricultural University (SWAU) are both administered at the national level by the Ministry of Agriculture and recruit from large regions; Nanjing Normal University (NNU) is administered at the local level by the Nanjing City

Department of Education; and Beijing Normal University is a key school administered at the national level by the SEdC. Two of the institutions, the agricultural ones, were rurally located, over one hour by car outside of Xian and Chongqing, and the two teacher colleges in major cities, Beijing and Nanjing. This distribution by location of the school cannot claim to be representative; national data on this distribution is not available. The sample is not representative of national TPHE enrollment. It is typical of major colleges in agricultural and educational sciences; however, these two subject areas constitute a large share of TPHE.

Teacher and agriculture education entrants in 1988 represented 38.7% of TPHE entrants; another 37.0% was in engineering; the remainder was medicine, language, arts, etc., and a few attended short-term training colleges (SEdC Yearbook, 1988, p. 26; see Appendix 1 Table I). TPHE enrollment share of total (88.8%) has remained similar since 1982 and 1985, when it constituted of total HE enrollment 87.7 and 79.9% respectively (State Education Commission 1986).

Two levels of stratification were used in the drawing of the random sample. At each institution, samples were drawn from representative majors in the core departments. For example, in the teaching colleges, students in majors in the education departments were chosen. The majors were distinguished and proportionately represented by the territory and type of region (e.g., national assignment area, urban location of industry) to which graduates are subject for job assignment.\[8] Within each major, a sample representative of actual enrollment categories was drawn. Within the enrollment category sampling was random.

Students from the four entering classes between 1986 and 1989 were sampled. When comparisons are made with the national TPHE or HE population, the entering class [zhaosheng] figures will be used.

Appendix 1 Table I shows a comparison between the latest available national statistics on students (entering class of 1988) by subject area and enrollment category and the cases included in the present sample (SEdC, 1988, 26).

Data

Quantitative data were collected by means of anonymous questionnaires. Information from interviews with educational officials at central government ministries and local institutions was used in modifying items on the survey. Policy and trends information was gained in these interviews as well.

The questionnaire sought data on the educational and family background of students. This data was retrieved from two sets of commonly kept student records housed in the HE institutions. Officials were helpful in gaining access to the student records, but did not interfere in the systematic or random selection of cases. Data analysis was conducted on the mainframe computer at the Kent State University Graduate School of Education Research Bureau.

The systematic/random data were compared to national enrollment category proportions and weighted accordingly (see Appendix Table I). The findings reported here are based on the weighted sample unless otherwise marked. 268 surveys are included in this study.

RESULTS

The general characteristics of the sample (n=268) were as follows: *(1)* Subject and Term of Study: 42.6% of the sample was studying education, 57.4% was enrolled in agriculture. Most students, 97.3%, were enrolled in four-year programs. This is somewhat higher than the 95.3% in HE nationally (SEdC 1988: 26). *(2)* Gender: 40.2% of students were female, a higher proportion than in the national HE population (32.3%) (SEdC, 1988: 26) largely due to a higher female proportion among teacher education students (54.6%). *(3)* Age: At the time of enrollment, most students (91.9%) were aged 18 to 25; most students of the next older age-range had enrolled in two-year courses as committed students. *(4)* Ethnicity: 96.5 were of Han descent, which is representative of national population proportions. *(5)* Location of Origin: 8.2% originated in major cities, due to the location of one of the four sites in Beijing, which is an overrepresentation as compared to the national HE population. Another 23.1% originated in other cities, 19.9 in county townships, and a large share, 47.6%, came from rural towns and villages.

The students' family background profiles were unexpectedly rural. *(6)* Fathers' occupational profile is somewhat bimodal with the greatest representation of rural agricultural workers followed by county level white collar workers; the modal industry is agriculture (40.6%), the second largest group is education and health (20.5%); the modal occupation again is agriculture (39.8%), followed by the white collar jobs: professional-technical (18.2%), official (14.6%), clerk (15.3%). Of the fathers' enterprises 47.6% were administered at the county level and 44.8% at the village level. *(7)* Mothers' occupational profile is also bimodal in the same pattern but more

pronounced. Rural agricultural workers predominate, followed by county level white collar workers; the modal industry is agriculture (51.8%), the second largest group is education and health (14.6%); the modal occupation again is agriculture (50.4%), followed by the white collar jobs: professional-technical (12.8%), clerk (12.8%), official (3.9%). Of the mothers' enterprises 36.5% were administered at the county level and 58.1% at the village level.

Next the findings on hypotheses relating to stratification trends in TPHE and correlation with or impact on enrollment categories will be presented.

Rural-Urban Stratification.

One variable directly indicates origin of the student, location of family home. It was found among the whole sample that parental background was unexpectedly rural. A high representation of rural background students was predicted by the high proportion of agricultural students in the sample; however, the 46.9% rural origin student proportion was unexpectedly high.

It is expected that the new enrollment categories, and the locally committed one in particular, will promote the greater participation of rural students in TPHE. The hypothesis explores the relationship between rural origin and enrollment category from three perspectives.

(1) It is posited that among students of rural origin, a majority will be found in the new enrollment categories. This hypothesis was based on the assumption that rural participation in the total HE population is relatively small, particularly as compared to the proportion of the new enrollment categories among all categories. The findings, shown in Table 1 below, do not support this hypothesis.

A test of the sample proportion of rural students in the new enrolment categories (31.8%) against the hypothesized value of 50% (majority) (row percentages) leads to the rejection of the hypothesis and the acceptance of the alternative hypothesis. More than 50% of rural students are in the old enrollment categories (68.2%), which difference in proportions is highly significant ($P<.0001$).

Since the participation of rural students in the total sample is high, certainly in comparison to the proportion of the new enrollment categories, a new hypothesis must be formulated. Proportionally, it is expected that rural students oversubscribe the new enrollment categories (31.8%). However, since the proportion of new enrollment categories amongst the total sample is only slightly smaller (29.2%), the difference is too small to be significant. This hypothesis also must be rejected. The result suggests that the creation of the new categories of enrollment has not resulted in a greater participation of rural students.

Table 1. Enrollment Category of Rural, County, and City Origin Students

Location	New			Old			Total
	Committ	Contr	New	Self-Sup	Ctrl Gvt	Old	
Rural #	24	16	40	3	83	87	127
Row %	--	--	31.8	--	--	68.2	100.0
Column %	44.4	66.7	51.7	16.7	48.5	46.0	47.6
County #	15	4	18	2	33	35	53
Row %	--	--	34.2	--	--	65.8	100.0
Column %	27.8	16.7	23.1	11.1	19.3	18.5	19.9
Urban #	16	4	20	13	51	64	84
Row %	--	--	23.5	--	--	76.5	100.0
Column %	29.6	16.7	25.6	72.2	29.8	33.9	31.5
Unknown #	0	0	0	0	3	3	3
Row %	--	--	0	--	--	100.0	100.0
Column %	0	0	0	0	1.7	1.6	1.1
Total #	54	24	78	18	171	189	267
Row %	--	--	29.2	--	--	70.8	100.0

(2) A second perspective was taken, suggesting that the proportion of rural origin students in the new enrollment categories will be higher than in the old enrollment category. The findings (column percentages in Table 1 above) do not support this hypothesis, either. The proportion of new category students from rural villages (51.7%) is found to be not significantly higher than the corresponding proportion of old category students (46.0%) on a test of independent proportions. The old enrollment categories, like the new categories, are composed of close to 50% rural origin students.

A study of the two old enrollment categories separately, central government scholarship and self-supported study, reveal that the self-supporting student category has significantly ($P<.05$) fewer rural students than the mainstream central government category (48.9%). Of the 18 self-supporting students, only 3 (18.2%) were from rural villages and only 2 (9.1%) were from county towns. This small subpopulation does represent an anomaly which is indicative, however, of new trends in enrollment

participation enabled by the freedom of the self-supporting category. An explanation of this anomalous group was provided by the academic director at SWAU. She mentioned that nearby urban worker families in Chongqing were willing to pay for daughters to attend a local school in order to keep them under family control. The closest school that would admit students rather unselectively was the agricultural college. This case is an illustration of the influence of the new categories on recruitment of students and the change in social demand effected.\[9]

It can be concluded that, at the public schools sampled, the self-support category contrasts with the other categories in that it is used predominantly by children of urban families.

The much larger, old enrollment category, when studied separately from the self-supporting category, is close to the new enrollment categories in rural-urban composition: 48.9% of central government scholarship students are from rural villages, compared to 51.7% of new category students.

The rural-urban composition of the new enrollment categories is also analyzed separately. Of the two new enrollment categories, the smaller, contract, has a significantly higher proportion of students from rural villages ($P<.05$) in a test of independent proportions. Of 24 contract students, 16 (66.7%) are from rural villages, compared to 44.0% of the committed students.

Thus among the new categories, it is the contract arrangement rather than the local commitment that is associated with greater than usual concentration of students of rural origin-policy assumptions to the contrary.

Another hypothesis is often advanced by scholars of Chinese rural education, that (3) rural origin students will tend to be from privileged families. Using the findings on

social class privilege, to explore this hypothesis in this sample is to suggest that rural origin students will tend to have a mother or father working at an enterprise administered at a higher than the rural level.

Zero-order correlations between each pair of following three variables, family location, mother's and father's administrative level are very highly significant (see discussion of social class indicators). This result would lead to an expectation that rural origin students tend to be from rural parental work enterprises. However, a closer look is possible through crosstab analysis and chisquare test of significance. The result is that 94% of rural origin students have mother who work in the village, a much higher than expected number (n=116 observed, 72 expected), and, in reverse, many fewer than expected (n=7 observed, 52 expected) work at a higher administrative level. The overrepresentation of rural parental work enterprises is highly significant ($P<.0001$).

On another measure of privilege, location of the school from which the student graduated, the correlation with family location is moderate but very significant (r=.4185, $P<.0001$). The crosstabulation (n=266) shows that among rural origin students (n=126), 14.7% (7 more than expected) attended rural high schools, 54.2% (15 more than expected) attended county high schools, and 17.7% (12 fewer than expected) attended provincial key schools.\[10]

Though these results are significant, it is necessary to explain that few rural villages provide high schools and that attending a county level high school is not a mark of privilege. However, those 17.7% rural origin students who graduated from provincial key schools represent a sample that received a privileged education.

The hypothesis that rural origin children come from privileged families must be rejected on the basis of these findings.

Similarly there is no indication of parental class and educational privilege among rural students when separately examining the sample by enrollment category. The differences of proportional representation of poor rural families by enrollment category are not significant.

Summary Rural Participation. The findings show that (1) rural students are not overrepresented in the new categories nor are the new enrollment categories oversubscribed by rural students. This result suggests that the creation of the new categories of enrollment has not resulted in a greater participation of rural students. A main hypothesis of this study that was based on the assumptions that lead to the creation of the policies under investigation must be rejected.

(2) A study of the two old enrollment categories separately reveals that the self-supporting student category is undersubscribed by rural students and the mainstream central government category is oversubscribed. Among the new categories, it is the contract arrangement rather than the local commitment that is associated with greater participation of rural students. Since there is a large and highly significant correlation between student origin and student employment levels, the latter finding is contrary to the policy assumptions that contract study would be employed in more developed regions.

Findings further show that (3) the parents of rural origin students are employed or work at the village level to an unexpected and highly significant extent. The results suggest that the parents of rural students tend to come from the poorest strata of society. No significant educational privilege was found either, though it may be noted that 17.7% rural origin students graduated from provincial key schools.

Overall, however, the finding that rural students represented a large share of all TPHE students was unexpected. As compared to available statistics on the relevant age group population in the 1982 census (State Statistical Bureau, 1982, pp. 318-321), the rural proportion in TPHE is overrepresented. To compare the survey findings with the national population, the definition of "rural" used in the census, which includes both categories, rural and county, was adopted. The sample's redefined "rural" share of 67.4% is substantially higher (22.1%) than the 55.2% "rural" share of the age group population.\[11]

It is expected that disadvantaged populations would enter HE in the lower status fields such as, in the PRC and many other societies, teacher education and agriculture. However, when, as at the end of the 1980s in the PRC, only 10-15% of the age group enter university (Meng, 1990), a high degree of selection is taking place. It is conceivable, and some would argue that there would be a tendency, for the cohort of college entrants to be composed of largely advantaged populations. Thus, in the context of the high selectivity for college entrance in the PRC, the overrepresentation of rural students in the lower status fields of HE is a notable development in the direction of equity of access. Inclusion of students in higher status TPHE subject areas will illuminate the issue of equity of access further (in preparation).

Social Class

The background variables that relate to the economic position of the individual parent were tested for zero-order correlation and it was found that location of the family, occupation of the mother and the father, the administrative level of the mother and the father are all highly correlated to each other (range of R = .6 - .8) at highly

significant levels ($P<.001$). A principal components analysis was done to describe a major factor indicating economic class. One factor was identified that described 70.7% of the variance between the background variables. This factor had a high correlation with all ingredient variables, the highest of which was administrative level of the mother (.90180). These findings justify the use of the variable mother's administrative level as the indicator for economic class.

The finding is reasonable in light of the stipulations of the household registration system, which, as mentioned above, largely accounts for the rigidity of Chinese economic stratification. Household registration of the family is passed along through the woman, that is, the mother.\[12] Women's employment traditionally is located as close to the home as possible. The correlation between family location and mother's administrative level is high ($R = .6741$ $P<.01$).

A second factor of privilege was explored, one which could indicate "hidden" privileges not otherwise noted in the enrollment information surveyed. The variable location of the school from which the student graduated can indicate several relationships that might convey privilege: (1) a family member living in a higher population center, e.g., an urban area, who will "adopt" the student for schooling purposes; (2) a relationship of clan to an official who could effect enrollment at a better school which is located in a population center, such as a county township or city; or, (3) a political relationship, such as membership in a ruling faction of the area CCP. The variable, on the other hand, might indicate (4) a recognition of high educational achievement by the student and admission to a key school. Though the variable does not necessarily indicate a relationship to privileged persons, the likelihood that it does not, depends on a high probability that students from poor schools can achieve high

scores on academic tests. Worldwide the association between educational achievement and social status is great. It is reasonable to conclude that in the PRC educational achievement is not entirely independent of social status, and that therefore the two aspects of this variable are interrelated. This variable can be interpreted to indicate social privilege, with a caution that it might in part also indicate educational achievement.

A third background variable, industry of father's work unit, is interpreted to be of relevance in schooling participation, either as a function of social network which might assist the student in coming to the attention of recruitment officers, or as a function of interest conveyed from father to child in a subject of study. Such interest would act as a preselection by the student into a subject area that is included in the present survey.

Hypotheses were constructed to explore the relationship between social privilege and economic class stratification and enrollment category. Zero-order correlations between individual background variables and enrollment category were largely insignificant and low. Therefore it appeared that a regression analysis would find no predictor of much explanatory power for the dependent variable enrollment category.

Multiple regression on the dichotomous enrollment category variable were run in block and stepwise mode. Entered as a block, mother's administrative level, father's industry, and location of upper secondary school, resulted in correlation with the dependent variable multiple R = .2226, an F change value of 3.14709 with a significance of P=.0151. As a block, it is found that the economic class and social privilege indicators are a weak but significant (P<.05) predictor of enrollment category. On a stepwise regression, location of upper secondary is found to be the first indicator with a weak correlation multiple R = .1538, P<.05, and mother's administrative level

was the second indicator entered with an F change value of 5.993 $P<.05$ to the dependent variable. The third step found no significant F change.

Summary, Social Class. The results suggest that economic class and social privilege indicators do explain a part of the choice or selection into enrollment categories. The indicators were found as a block to be weak but significant predictor of enrollment category.

Gender

It is posited that female students 1) will be overrepresented in teacher education and underrepresented in agriculture, as compared to males, who will be overrepresented in agriculture; 2) will be more likely to be found in the old categories; 3) will be more likely to have a higher socio-economic background than male students. The first hypothesis is based on a presumption of a modern type of gender stereotyping that permits women to join the world of work as teachers in preference over agricultural technicians, and many other careers. The second hypothesis is based on the presumption that where local officials exercise choice, they will be subject to gender preference for males. The third hypothesis is based on the assumption that male children will be chosen to go to college before female children at lower socio-economic levels where resources are scarcer, and that it requires a higher socio-economic level and more resources before female children are sent to college.

(1) On the question of gender stereotyping in choice and selection in subject area, the female students will be compared with the male students. Finding the distribution of students by sex across subject area allows us to test the significance of the sample proportions (column percentages in Table 2). The finding on a chi-square test of

significance of the uneven distribution of females and males across subject area is highly significant ($P<.0001$). Or approaching the same distribution with a different test of significance, the test of proportions, the proportion of females in teacher education (57.1%) against the 41.4% of the total sample in teacher education also results in a highly significant ($Z = 3.27$, $P<.001$) finding. This finding suggests a strong choice or selection bias towards females in teacher education.

Table 2. Crosstabulation of Sex by Subject Area for N = 256

Sex	Agriculture	Teachers	Total
Female #	45	60	105
Row %	42.9	57.1	100.0
Column %	30.0	56.6	41.0
Male #	105	46	151
Row %	70.0	30.5	100.0
Column %	70.0	43.4	59.0
Column Total	150	106	256
Row %	58.6	41.4	100.0

Chi-Square Value 19.58164, $P<.0001$.

Note. This data excludes both females and males in short term courses in these institutions; therefore the n is smaller than the whole sample.

(2) Comparing female and male students by enrollment category in all public schooling is done using the same analyses as above. The finding shown in Table 3 that female students are overrepresented (75.0%) in the old categories (as against 56.6% of all students in old categories) is highly significant ($Z = 3.83$, $P<.0001$).

Table 3. Crosstabulation of Sex by Enrollment Category for N = 267

Sex	New			Old			Total
	Committ	Contr	New	Self-Sup	Ctrl Gvt	Old	
Female #	20	7	27	11	70	81	108
Row %	18.2	6.8	25.0	10.4	64.6	75.0	100.0
Column %	35.5	30.8	34.2	63.6	40.8	42.8	40.3
Male #	36	16	52	6	101	107	160
Row %	22.3	10.3	32.5	4.0	63.4	66.9	100.0
Column %	64.5	69.2	65.8	36.4	59.2	56.6	59.7
Column Total	55	24	79	18	171	189	267

Note. This data excludes both females and males in short term courses in these institutions; therefore the n is smaller than the whole sample.

The findings suggest that males are given preference in the locally controlled selection mechanism in the two new enrollment categories; and males are treated without preference in the central government selection process. The male-female proportions in the central government scholarship category (59.2% to 40.8%) are very similar to that of the total sample (59.7% to 40.3%), and of no significance.

Females, on the other hand, dominate in the self-supported enrollment category, showing that among those families with the resources to pay for HE, girl children are chosen. Interviews with the academic officials at SWAU revealed that most of these girls were from urban middle class families who wanted their daughters to study in nearby schools, the easiest of which to enter was the agricultural college.

(3) In order to compare female and male students on background factors, it is necessary to explore the third hypothesis. A *t*-test of significance on the variation in the two group means was done and is shown in Table 4 below. The analysis shows that on the three family background variables females have a highly significant higher mean.

On the indicator of other privilege, location of high school from which the student graduated, once having controlled for subject of study, there is no significant variation of means between female and male students.

Table 4. Comparison of Sex Group Means of Background Variables, *T*-test

	Female	Male	*T* Value	2-Tail Probab
All Public Schools Students:				
Mother's Adm. Level	1.7748	1.3136	5.24	.000
Mother's Industry	4.1448	2.7789	5.37	.000
Family Location	2.3776	1.5747	6.40	.000
Location High Sch.	3.0030	2.5911	3.01	.003
Teacher College Students:				
Mother's Adm. Level	1.8711	1.4266	3.00	.003
Mother's Industry	4.4249	2.7802	4.34	.000
Family Location	2.5441	1.7251	3.87	.000
Location High Sch.	3.4630	3.4378	0.12	.906
Agriculture College Students:				
Mother's Adm. Level	1.6366	1.2651	3.91	.000
Mother's Industry	3.7772	2.7783	2.76	.007
Family Location	2.1565	1.5032	4.24	.000
Location High Sch.	2.3848	2.1853	1.42	.161

The variation in means of female and male students is impacted by the subject of the schooling. The results show that in teacher education female students have a higher mean on every indicator than in agricultural education, though that of the male students is only very slightly lower. That is for female students, more so than for male students, higher social class is correlated with enrollment in teacher education in preference to agricultural education. These findings imply that for females teacher education is more selective of higher status, and is perhaps more difficult to attain, than agriculture

education. For males the association between social class status and the two subject areas is similar. This finding further supports the acceptance of the first hypothesis.

(2) Family Background. The background variables independently have a consistent, moderate, and very significant negative correlation with the gender of the student (see Table 5 for zero-order correlations). These results suggest that female students have a higher status background than male students--as predicted in the third hypothesis.

Table 5. Background Variables Correlation with Sex

Background Variables	Sex
Father's Industry	-.1715**
Father's Administrative Level	-.3029**
Father's Occupation	-.3321**
Mother's Industry	-.3320**
Mother's Administrative Level	-.3381**
Mother's Occupation	-.3060**
Family Location	-.3805**
Father's Education	-.2611**
Mother's Education	-.3099**
Occupational Advantage	-.3602**

Note. ** - $P<.01$

A second analysis is done to control for subject-of-study related gender stereotyping. Only the major independent background variables isolated in the social class analysis are used in this analysis. The significant though modest negative correlation between sex (R = -.2005) and subject (R^2 = .1805 $P<.01$) shows that girl students (lower value) tend to be found in teacher education (higher value) rather than

agriculture. It is reasonable to assume that gender stereotyping may be unequally distributed and may confound other background variables.

The correlation between background variables and sex, controlling for subject of study, is negative, moderate and highly significant ($P<.001$). Families of female students tend to live in more populated, urban areas (higher values), have mothers' working in enterprises at higher administrative levels, and the students had graduated from higher level, and presumably higher quality, high schools (see Table 6).

Table 6. Background Variables Partial Correlation with Sex, Controlling for Subject

	Sex
Mother's Administrative Level	-.3101***
Mother's Industry	-.3116***
Family Location	-.3702***
Location of High School	-.1650***

Note. *** = $P<.001$

Summary, Gender. Female students in this sample study teacher education in significantly more so than male students and in preference to agriculture; 2) will be more likely to be found in the old categories; 3) come from a significantly higher socio-economic background than male students.

The findings suggest a continued impact of gender stereotyped expectations of female students, preference of males for college attendance, and no impact of the new categories in meliorating these stratification patterns.

CONCLUSION

The results of this study suggest that a combination of economic and social class indicators can be used across the rural-urban gap on a China-wide population.

The major findings of this study are that rural origin students constituted a large share of TPHE enrollees; a proportion that is only slightly lower than their share of total age group population. Among these rural students, families on the lowest social and economic measures are overrepresented. Though poor rural students are finding greater access to TPHE than their more privileged rural cousins, the new enrollment categories do not contribute to this access any more than do the old categories. This finding suggests that the overall TPHE enrollment efforts are being successfully directed at the rural and poor rural students, but that the new recruitment-placement policies are no more successful than the old.

Chinese policy makers can be satisfied that the new enrollment policies are recruiting poorer rural students into TPHE in two crucial developmental areas, agricultural and teacher education.

On gender stratification, the results suggest a continued impact of gender stereotyped expectations on female students regarding subject of study, and a preference of males for college attendance. The new categories do not meliorate these stratification patterns; indeed, the old categories are more successful at recruiting female students. The preference for male college enrollment is not only indicated by their greater proportion but also by the relationship between economic class and female

students. Female students come from a significantly higher socio-economic background than male students.

The results of the study suggest that economic class and social privilege indicators have a small, significant predictive value of enrollment categories. In view of the findings regarding the overrepresentation of poor background students among the rural students, and the high proportion of rural students in the sample, the small predictive value of socio-economic class is explained.

In terms of the goals of the new enrollment policies to broaden access to those in economically needy areas and those who by virtue of location of origin might return to those locations, the results of the study show success, but no greater success for the new over the already extant categories. The implications of this finding need to be further reviewed.

APPENDIX 1: TABLE I

Students in 1988 Entering Class at Technical-Professional Higher Education Institutions
By Subject Area, Administration, Enrollment Category, and Gender

	1988 Entering Students			1990	Weighted<1	Percent
	Number	Percent	0.05%	Sample	Sample	of W.S.
	(1)	(2)	(3)	(4)	(5)	(6)
All TPHE	594,940	100.0	297	273	268	100.0
SUBJECT AREA						
Engineering	220,075	37.0	110	0	0	0.0
Medicine	46,243	7.8	23	0	0	0.0
Teacher	189,272	31.8	95	111	115	42.9
Lang, Fin, Pol, Leg	53,340	9.0	27	0	0	0.0
Agric, Forest	40,778	6.9	20	162	153	57.1
PE, Art, Others	15,953	2.7	8	0	0	0.0
ShortTermTech	29,279	4.9	14	0	0	0.0
ADMINISTRATION OF SCHOOL						
SEdC Institutions	63,929	10.7	32	63	59	22.1
Other Centr Min	177,517	29.8	88	162	154	57.5
Local	353,494	59.4	177	50	55	20.5
ENROLLMENT CATEGORY						
CtrlGvtScholar	382,418	64.2	191	174	172	64.0
Self-Support	37,479	6.3	19	11	18	6.6
Contract	56,043	9.4	28	13	24	8.8
Locally Committed	119,000	20.0<2	59	75	55	20.6
FEMALE STDNTS	192,165	32.3	86	108	108	40.2

Abbreviations. W.S. = weighted sample. TPHE = technical-professional higher education. Lang = foreign language for translator duties; Fin = finance; Pol = political studies; Leg = legal; Agric = agriculture; Forest = forestry and aquaculture; PE = physical education; ShrtTrmTech = short-term (2-3 year) technical training. SEdC = State Education Commission; Centr Min = Central government ministries; CtrlGvtScholar = Central government tuiton-waiver scholarship.

Notes. <1 The sample was weighted to obtain representative proportions by enrollment category. <2 This proportion was cited by Mr. Han, the Deputy Director for Higher Education in the Ministry of Agriculture, Beijing, 1990. National and local statistics do not separately enumerate locally committed from other central government tuition-waiver students.

Source. SEdC, *National Educational Statistics Yearbook 1988*, pp. 26,27.

APPENDIX 2: DOCUMENTARY HISTORY

The implementation of the following TPHE policies and trends regarding new channels of access and new types of schools are investigated. The policy initiatives and documents are given in chronological order.

1) In 1982 a first private college was founded. In the mid-1980s a number of various types of private post-secondary institutions operated throughout China, largely offering VT training, similar to commercial colleges in the US (Xinhua 1/26/1983).
2) Agricultural leaders initiate the joint development with the SEdC of new channels of student recruitment to regular colleges and universities: "locally committed scholarship," "contract scholarship," and self-support (MoA 1983).
3) The educational reform regulations of 1985 allowed the central government to set a quota for students "serving specific (economic manpower) needs ... to ensure that outlying regions and trades and profession with tough working conditions get a certain number of graduates to work for them" (Chinese Communist Party Central Committee Central Committee 1985: 6).
4) The 1985 regulations specified that "the system of training (HE) students by schools at the request of employers ... should be extended, so that it becomes an important supplement to the state plan" (*Chinese Educational News* 12/11/1984: 7). The "contract" scholarship program would supply specialty training at special training schools [zhuanke xuexiao] or regular colleges, if the enterprise paid a scholarship and salary, for which it would receive, in turn, several (5-7) years work from the graduate.
5) The 1985 regulations allowed schools to enroll "a small number of students ... at their own expense ... in addition to the state plan" (Chinese Communist Party Central Committee Central Committee: 7).
6) Regulations do not permit transfer from specialized technical short-term [dazhuan] to regular HE institutions (State Council 4/30/1984).
7) The state plan for recruitment to regular colleges and universities sets quotas for locally committed, contract and self-supported students in order to curb profiteering by colleges and universities (Xin 1990).
8) 1988, regular HE institutions clarify the recruitment and job assignment priority system. Institutions, even those administered at the national or regional (several provinces) level, will give assignment priority to the student's province of origin. Institutions will recruit and assign more students from/to the local than from/to other provinces. Further localization is encouraged; e.g., in 1988, Hunan University of Science and Technology announced it would henceforth recruit students solely from rural areas to which all graduates would return to work (Xinhua, 8/9/1988).
9) 1988, locally committed scholarship recruitment will concentrate in the areas of agriculture, energy, and light industry; plans for management, administrative responsibilities, financial support, and quotas of students are published (SEdC 1988).
10) 1990, in agriculture, locally committed scholarship policy's main goal is the return of talent to the village and remote regions; and that a special category of recruits would receive emphasis: adults with village or state farm household registration and a minimum of two years of work experience. Such students would be take a provincial test rather than standard national entrance exam and have a higher maximum enrollment age up to 28 years (MoA 1990).

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ENDNOTES

1. Manpower, though it is a sexist term, is used in this article where unavoidable; that is, where no substitute is appropriate. The author expresses her regrets.

2. A broad general interpretation of the word modern is used here, rather than one specific to modernization or development theory.

3. Inequalities that persist over time, from generation to generation, constitute stratification of the population.

4. Perhaps the widest economic and social gap is found between the western and southern border regions of the PRC, which are inhabited by minorities, and the developed coastal areas inhabited by the Han Chinese. The unavailability of reliable and sufficient data and research opportunities on border and other minority region conditions impedes investigation of this stratification.

5. In the 1980s, education was restructured and figures were no longer published which distinguish between urban and rural schooling expenditures.

6. Interviews conducted in 1990 with educational officials and researchers in the central government and in tertiary institutions throughout the country provide a fairly complete picture of the progress of implementation.

7. Reasons cited for this range from historic evidence of recurrant major political-economic policy shifts to economic instability since introduction of limited free market principles and measures.

8. This distinction was made based on the hypothesis that students select not only colleges and departments, but also majors based on the likelihood of being assigned to a desirable location for work. This hypothesis was uniformly emphasized in interviews in 1990 and previously. A later study will analyze results from this perspective of educational selection.

9. It is also an illustration of the strength of social demand even when choice is rather restricted; a sign of new trends expressing the exercise of individual choice in the dynamics of Chinese society. A separate study of students in private business colleges, surveyed at the same time and on the same instrument as the present sample, revealed similar strength of trends in expressions of private choice (to be published).

10. The percentages add to 100 when adding the unknown 5.4%.

11. The relevant age group in the census was ages 13, 14, 15-18 in 1982 and would have been ages 18, 19, 20-23 in 1987, the mean year of entry of students in this survey.

12. Wives traditionally join their husband's family, but in the case that this would involve a transfer of the household registration to a higher level, from rural to urban, permission is granted under unusual circumstances only.